



**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**In re Application of:**

Sandhu et al.

**Serial No.:** 10/637,102

**Filed:** August 8, 2003

**For:** LOW RESISTANCE CONTACT TO  
SILICON HAVING A TITANIUM SILICIDE  
INTERFACE AND AN AMORPHOUS  
TITANIUM CARBONITRIDE BARRIER  
LAYER

**Examiner:** L. Gurley

**Group Art Unit:** 2812

**Attorney Docket No.:** 2269-3264.7US  
(92-0280.10/US)

**CERTIFICATE OF MAILING**

I hereby certify that this correspondence along with any attachments referred to or identified as being attached or enclosed is being deposited with the United States Postal Service as First Class Mail on the date of deposit shown below with sufficient postage and in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

April 6, 2004  
Date

Signature

Deidra Pfeil  
Name (Type/Print)

**SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In compliance with the duty to disclose information material to patentability pursuant to 37 C.F.R. § 1.56, it is respectfully requested that this Supplemental Information Disclosure Statement be entered and the documents listed on attached Form PTO-1449 or PTO/SB/08 be considered by the Examiner and made of record. The listed documents are from co-pending application Serial No. 10/637,107, filed August 8, 2003. Copies of the listed documents are enclosed pursuant to 37 C.F.R. § 1.98(a).

In accordance with 37 C.F.R. § 1.97(g) and (h), filing of this Supplemental Information Disclosure Statement is not to be construed as a representation that a search has been made or an admission that the information cited herein is, or is considered to be, material to patentability as defined in 37 C.F.R. § 1.56(b). Further, no representation is made by Applicants herein that no other possible material information as defined in 37 C.F.R. § 1.56 (b) exists.

U.S. Patent Documents

<u>U.S. Patent No.</u>	<u>Publication Date</u>	<u>Patentee</u>
4,998,151	03/05/91	Korman et al.
5,242,860	09/07/93	Nulman et al.

Foreign Patent Documents

<u>Document No.</u>	<u>Publication Date</u>	<u>Patentee</u>
WO 86/01640	03/13/86	Dean

Other Documents

EIZENBERG et al., "TiCN: A new chemical vapor deposited contact barrier metallization for submicron devices", Appl. Phys. Lett. 65 (19), 7 November 1994, pps. 2416-2418.

Peng et al., "Properties of CVD-W Overgrowth on PVD and MOCVD TiN Layers, IEEE, 5th International Conference Proceeding on Solid-State and Integrated Circuit Technology, 1998, pps. 211-214.

Applicants offer to supply any explanation or discussion of the documents which the Examiner feels is necessary or desirable and which is requested.

This Supplemental Information Disclosure Statement is filed after the mailing date of the first Office Action on the merits.

I hereby certify that no item of information contained in the Supplemental Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the undersigned after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of the statement, and therefore no fee is due.

Respectfully submitted,



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Date: April 6, 2004  
JRD/sls:djp

Enclosures: Form PTO-1449 or PTO/SB/08  
Copy of documents cited

Document in ProLaw

APR 08 2004

PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

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## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

*(use as many sheets as necessary)*

Sheet

**1**

of

2

Attorney Docket Number

**Complete if Known**

Application Number

10/637,102

Filing Date

August 8, 2003

First Named Inventor

Sandhu et al.

Group Art Unit

2812

Examiner Name

L. Gurley

Attorney Docket Number

3264.7US (92-0280.10/US)

## U.S. PATENT DOCUMENTS

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## FOREIGN PATENT DOCUMENTS

[illegible]

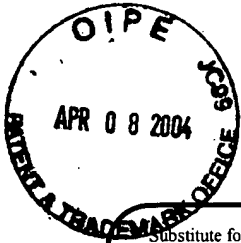
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Date  
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<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

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STATEMENT BY APPLICANT**

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Sheet 2 of 2

**Complete if Known**

Application Number	10/637,102
Filing Date	August 8, 2003
First Named Inventor	Sandhu et al.
Group Art Unit	2812
Examiner Name	L. Gurley
Attorney Docket Number	3264 7US (92-0280.10/US)

**OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		EIZENBERG et al., "TiCN: A new chemical vapor deposited contact barrier metallization for submicron devices", Appl. Phys. Lett. 65 (19), 7 November 1994, pps. 2416-2418.	
		Peng et al., "Properties of CVD-W Overgrowth on PVD and MOCVD TiN Layers, IEEE, 5 <sup>th</sup> International Conference Proceeding on Solid-State and Integrated Circuit Technology, 1998, pps. 211-214.	

Examiner Signature		Date Considered	
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